

### REMARKS

Claims 29, 45, 46, 48 and 52-55 have been amended. Claims 31, 32, 34, 37-44 and 56-65 have been canceled. Thus, claims 29, 30, 33, 35, 36 and 45-55 are now pending in the present application. Support for the amendment to claim 29 may be found in the specification at page 4, paragraph [0014] and in previous claim 32. Support for the amendment to claim 54 may be found in the specification at page 7, paragraph [0029]. Therefore, no new matter has been added, and entry of these amendments is respectfully requested.

#### Interview Summary

Applicants' representatives would like to thank Examiners King and McNeil for the courtesy extended to them during the telephonic interview conducted on January 11, 2010. The substance of this interview is reflected in the amendments and remarks presented herein.

#### Rejections under 35 U.S.C. § 112, second paragraph

Claims 33, 41, 52 and 62 were rejected under 35 U.S.C. § 112, second paragraph as allegedly being indefinite. Claims 41 and 62 have been canceled, thus rendering the rejection moot as it applies to these claims.

The Examiner states that claim 33 improperly depends from claim 29, since claim 29 recites that "at least one of" the amino acids is present, whereas claim 33 recites a ratio requiring the presence of all four amino acids. As amended herein, claim 29 recites all four amino acids (leucine, isoleucine, valine and phenylalanine) rather than "at least one of." Thus, the particular ratio of these four amino acids as recited in claim 33 now properly depends on claim 29.

The Examiner also contended that use of the term "and/or" in claim 52 rendered the claim indefinite. Claim 52 as amended recites "or", rather than "and/or." § 112, second paragraph.

In view of the comments presented above, Applicants respectfully request reconsideration and withdrawal of the rejections under 35 U.S.C.

#### Rejection under 35 U.S.C. § 103(a)

Ano et al. (US 3,536,498) in view of Ziemke et al. (US 4,034,125)

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Claims 29-31, 37-39, 46-48, 51-53, 56-58 and 61-63 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ano et al. (US 3,536,498) in view of Ziemke et al. (US 4,034,125). Claims 31, 37-39, 47, 56-58 and 61-63 have been canceled, thus rendering the rejection moot as it applies to these claims.

Claim 29 as amended incorporates the subject matter of canceled claim 32 (amino acid composition comprises leucine, isoleucine, valine and phenylalanine), which was not rejected as being obvious over Ano et al. in view of Ziemke et al. Neither Ano et al., nor Ziemke et al. disclose or suggest all of the components recited in present claim 29. In particular, neither of these references discloses or suggests valine as an amino acid present in the compositions disclosed therein. Thus, claim 29, as well as claims 30, 46, 48 and 51-53 which depend either directly or indirectly on claim 29, cannot be obvious over these references.

**Ano et al. (US 3,536,498) in view of Ziemke et al. (US 4,034,125) and Wiseblatt (US 3,304,184)**

Claims 32, 33, 40 and 41 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ano et al. (US 3,536,498) in view of Ziemke et al. (US 4,034,125) and Wiseblatt (US 3,304,184). Claims 32, 40 and 41 have been canceled, thus rendering the rejection moot as it applies to these claims. As noted above, the subject matter of claim 32 has been incorporated into claim 29. Present claim 29 recites a blend comprising a yeast, a sourdough, and free amino acids comprising leucine, valine, isoleucine and phenylalanine, wherein the amino acids are fermented by the yeast present in the blend upon activation of the yeast, and wherein the blend has a dry matter content of at least 90%.

The present invention relates, in part, to a composition and method which results in increased sourdough flavor, which counteracts the loss of flavor caused by the drying step (see Examples 5, 9, 10 and 12 of the present specification). Ano et al. discloses a composition for use in baking comprising leucine, isoleucine and phenylalanine, but neither discloses nor suggests the presence of valine. Ziemke et al. discloses addition of acids such as acetic acid and lactic acid with normally solid, edible fatty material in order to mimic a sourdough flavor. However, this material is not an actual sourdough. Furthermore, Ziemke et al. is not related to the re-fermentation of dried sourdough by yeast which occurs in the presence of the four amino acids

recited in present claim 29. In fact, at col. 1, lines 32-35, Ziemke notes that "the baker is faced with considerable difficulty in maintaining a constant flavor level in sourdough breads." In addition, this reference does not disclose the use of any amino acids. Although Wiseblatt discloses valine, it does so in the context of a chemical leavening process in which individual amino acids, including valine, are boiled with aqueous mixtures of 1,3-dihydroxy-acetone to result in specific aromas and flavors (see column 2) which mimics the flavor of yeast-leavened bread as acknowledged in column 2, line 72, as opposed to the yeast-based fermentation recited in the present claims. In addition, this reference neither discloses nor suggests a sourdough. Thus, in Wiseblatt, no yeast-based amino acid fermentation can occur. In view of the above, a person of ordinary skill in the art would certainly not combine these references to arrive at the claimed compositions which recite a yeast, a sourdough, four particular amino acids, and fermentation of the amino acids by yeast upon yeast activation.

Furthermore, with respect to the claimed methods (in which the blend is fermented by yeast) in view of the focus of Ziemke and Wiseblatt on methods which do not employ fermentation, those skilled in the art would have no motivation to develop the claimed fermentation-based methods.

Applicants also note that out of all of the possible combinations of four amino acids, the cited references provide no motivation to select the exact combination recited in present claims 29 and 33. There are 22 proteinogenic amino acids, or amino acids encoded by the standard genetic code. The probability of arriving at the specific combination recited in present claim 29 is thus  $1/7,315$  [ $(22 \times 21 \times 20 \times 19/4 \times 3 \times 2 \times 1)$ ]. This probability is even less if non-standard amino acids are considered (e.g., hydroxyproline as disclosed by Wiseblatt at col. 2, line 35; cystine disclosed by Weber (US 2,434,087), hydroxylysine, taurine, etc.).

In addition, the particular ratio of leucine, isoleucine, valine and phenylalanine (as recited in present claim 33) would not have been obvious based on this combination of references. As already noted, Ano discloses leucine, isoleucine and phenylalanine, but not valine. Even in leucine, isoleucine and phenylalanine were mixed in accordance with Table I of Ano et al, the blend obtained would have a ratio of leucine 1; isoleucine 1, and phenylalanine 0.5. In contrast, the ratio obtained in accordance with present claim 33 would be leucine 4; isoleucine 1; and phenylalanine 1. Thus, the leucine:isoleucine ratio in present claim 33 is 4-fold higher than that

disclosed by Ano et al. There is also a 2-fold difference in the leucine:phenylalanine ration, and a 2-fold difference in the isoleucine:phenylalanine ratio.

In addition, claims 53 and 54 now recite that the dosage of the amino acid composition is at least 0.001% and below 0.05% of the total amount of flour in the final product. In contrast, Wiseblatt discloses that the amino acid content is about 0.225% (deduced from col. 3). Thus, the amount of the amino acid composition recited in present claims 53 and 54 is significantly lower than that of Wiseblatt.

**Ano et al. (US 3,536,498) in view of Ziemke et al. (US 4,034,125) and Weber (US 2,434,087)**

Claims 34, 42, 50 and 60 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ano et al. (US 3,536,498) in view of Ziemke et al. (US 4,034,125) and Weber (US 2,434,087). Claims 34, 42, and 60 have been canceled, thus rendering the rejection moot as it applies to these claims. Claim 50 recites adding a protein hydrolysate. Ano and Ziemke are discussed above. Weber does not remedy the deficiencies in the teachings of Ano et al. and Ziemke et al. Thus, since claim 29, upon which claim 50 ultimately depends, is not obvious over these references, then claim 50 cannot be obvious.

**Ano et al. (US 3,536,498) in view of Ziemke et al. (US 4,034,125) and Johnson (US 3,897,568)**

Claims 35 and 43 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ano et al. (US 3,536,498) in view of Ziemke et al. (US 4,034,125) and Johnson (US 3,897,568). Claim 43 has been canceled, thus rendering the rejection moot as it applies to this claim. Claim 35 recites that the blend is produced by co-extrusion or dry blending of the ingredients. Ano and Ziemke are discussed above. Johnson does not remedy the deficiencies in the teachings of Ano et al. and Ziemke et al. Thus, since claim 29, upon which claim 35 depends, is not obvious over these references, then claim 35 cannot be obvious.

**Ano et al. (US 3,536,498) in view of Ziemke et al. (US 4,034,125) and Rudel (US 4,961,937)**

Claims 36 and 44 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ano et al. (US 3,536,498) in view of Ziemke et al. (US 4,034,125) and Rudel (US 4,961,937).

Claim 44 has been canceled, thus rendering the rejection moot as it applies to this claim. Claim 36 recites that the blend is vacuum packed. Ano and Ziemke are discussed above. Rudel does not remedy the deficiencies in the teachings of Ano et al. and Ziemke et al. Thus, since claim 29, upon which claim 36 depends, is not obvious over these references, then claim 36 cannot be obvious.

**Ano et al. (US 3,536,498) in view of Ziemke et al. (US 4,034,125), Boecker (EP 1110458, Derwent Abstract) and Adams et al. (2001 Fermentation and Food Safety).**

Claim 45 was rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ano et al. (US 3,536,498) in view of Ziemke et al. (US 4,034,125), Boecker (EP 1110458, Derwent Abstract) and Adams et al. (2001 Fermentation and Food Safety). Claim 45 recites a method for refermenting a dried sourdough with yeast, comprising adding flour and water to the blend of claim 29, and fermenting the mixture with yeast. Ano and Ziemke are discussed above. Boecker and/or Adams et al. do not remedy the deficiencies in the teachings of Ano et al. and Ziemke et al. Thus, since claim 29, upon which claim 45 depends, is not obvious over these references, then claim 45 cannot be obvious.

Applicants note that Boecker and Adams add nothing more to the teachings of Ziemke. None of Ziemke, Boecker or Adams teaches or suggests the use of a dried sourdough to be re-fermented by yeast in the presence of the four amino acids recited in present claim 45. Ziemke, at col. 1, lines 24-45, explains the difficulties in preparing sourdough, and refers to the need to maintain perfect fermentation conditions and to make regular additions to the fermentation every 24 hours. Ziemke, Boecker and Adams relate to traditional sourdough preparation, which uses a starter (piece of the previous sourdough), under the same conditions, in order to maintain a constant flavor level.

**Ano et al. (US 3,536,498) in view of Ziemke et al. (US 4,034,125) and Lendvay et al. (US 3,499,765)**

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Claims 49 and 59 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ano et al. (US 3,536,498) in view of Ziemke et al. (US 4,034,125) and Lendvay et al. (US 3,499,765).

Claim 59 has been canceled, thus rendering the rejection moot as it applies to this claim. Claim 49 recites adding one or more of a protease, transaminase, carboxylase, dehydrogenase or esterase. Ano and Ziemke are discussed above. Lendvay et al. does not remedy the deficiencies in the teachings of Ano et al. and Ziemke et al. Thus, since claim 29, upon which claim 49 ultimately depends, is not obvious over these references, then claim 49 cannot be obvious.

**Ano et al. (US 3,536,498) in view of Ziemke et al. (US 4,034,125) and C. Thiele et al. (Cereal Chemistry, Vol. 79, Number 1)**

Claims 54, 55, 64 and 65 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ano et al. (US 3,536,498) in view of C. Thiele et al. (Cereal Chemistry, Vol. 79, Number 1).

Claims 64 and 65 has been canceled, thus rendering the rejection moot as it applies to these claims. Claims 54 and 55 recite specific amounts of the amino acid composition. Ano and Ziemke are discussed above. Thiele et al. does not remedy the deficiencies in the teachings of Ano et al. and Ziemke et al. Thus, since claim 29, upon which claims 54 and 55 ultimately depend, is not obvious over these references, then claims 54 and 55 cannot be obvious.

In view of the comments presented above, Applicants respectfully request reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a).

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CONCLUSION

Applicants submit that all claims are in condition for allowance. However, if minor matters remain, the Examiner is invited to contact the undersigned at the telephone number provided below.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

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By: 

Neil S. Bartfeld, Ph.D.  
Registration No. 39,901  
Agent of Record  
Customer No. 20,995  
(619) 235-8550

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